Claim Amendments

1. (currently amended) A method of making an oxidation-resistant alloy melt, wherein said alloy melt comprises, in weight percent of alloying metals, 2 to 9 % aluminum, 1 to 7 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys, ~~magnesium as a primary alloying metal, and aluminum and strontium as secondary alloying metals, and~~ wherein said method comprises: melting said alloying metals under an atmosphere of an inert gas selected from a mixture of carbon dioxide and sulfur fluoride gas, a mixture of nitrogen and sulfur dioxide gas, and combinations thereof.

2. (cancelled)

3. (currently amended) A method of making a magnesium-based alloy casting from an oxidation-resistant alloy melt, wherein said alloy comprises, in weight percent of alloying metals, 2 to 9 % aluminum, ~~0.5~~ 1 to 7 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys, and wherein said method comprises: melting said alloying metals under an atmosphere of an inert gas selected from a mixture of carbon dioxide and sulfur fluoride gas, a mixture of nitrogen and sulfur dioxide gas, and combinations thereof.

4. (original) The method of claim 3, wherein said alloy has a structure including a matrix of grains of magnesium having a mean particle size of from about 10 to about 200 micrometers reinforced by intermetallic compounds having a mean particle size of from about 2 to about 100 micrometers.

5. (currently amended) An oxidation-resistant alloy melt, wherein said alloy melt comprises, in weight percent of alloying metals, 2 to 9 % aluminum, 1 to 7 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys, ~~magnesium as a primary alloying metal and aluminum and strontium as secondary alloying metals, and~~ wherein said alloy melt is prepared by a method comprising: melting said alloying

metals under an atmosphere of an inert gas selected from a mixture of carbon dioxide and sulfur fluoride gas, a mixture of nitrogen and sulfur dioxide gas, and combinations thereof.

6. (currently amended) The oxidation-resistant alloy melt of claim 5, wherein said alloy melt comprises, in weight percent, 2 to 9 % aluminum, ~~0.5 to 7~~ 1 to 5 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys.

7. (currently amended) The oxidation-resistant alloy melt of claim 6, wherein said alloy melt consists essentially of, in weight percent, 2 to 9 % aluminum, ~~0.5 to 7~~ 1 to 3 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys.

8. (currently amended) The oxidation-resistant alloy melt of claim 7, wherein said alloy melt consists of, in weight percent, ~~2 to 9~~ 4.0 to 6.0 % aluminum, ~~0.5 to 7~~ 1 to 3 % strontium, ~~0 to 0.60~~ 0.25 to 0.35 % manganese, and ~~0 to 0.35~~ 0 to 0.10 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys.

9. (currently amended) A magnesium-based alloy casting prepared from an oxidation-resistant alloy melt, wherein said alloy comprises, in weight percent of alloying metals, 2 to 9 % aluminum, ~~0.5~~ 1 to 7 % strontium, 0 to 0.60 % manganese, and 0 to 0.35 % zinc, with the balance being magnesium except for impurities commonly found in magnesium alloys, and wherein said alloy melt is prepared by a method comprising: melting said alloying metals under an atmosphere of an inert gas selected from a mixture of carbon dioxide and sulfur fluoride gas, a mixture of nitrogen and sulfur dioxide gas, and combinations thereof.

10. (original) The magnesium-based alloy casting of claim 9, wherein said alloy has a structure including a matrix of grains of magnesium having a mean particle size of from about 10 to about 200 micrometers reinforced by intermetallic compounds having a mean particle size of from about 2 to about 100 micrometers.